In [1]:

```python
import pandas as pd

df = pd.read_csv("tips.csv")
df.head()
```

Out[1]:

	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4

In [2]:

```python
# Sum
df['total_bill'].sum()
```

Out[2]:

4827.77

In [3]:

```python
#mean
df['total_bill'].mean()
```

Out[3]:

19.785942622950824

In [4]:

```python
#median
df['total_bill'].median()
```

Out[4]:

17.795

In [5]:

```python
#mode
df['sex'].mode()
```

Out[5]:

```
0    Male
Name: sex, dtype: object
```

In [6]:

```python
1  #min
2  df['total_bill'].min()
```

Out[6]:

3.07

In [7]:

```python
1  #max
2  df['total_bill'].max()
```

Out[7]:

50.81

In [8]:

```python
1  #range
2  df['total_bill'].max()-df['total_bill'].min()
```

Out[8]:

47.74

In [9]:

```python
1  #variance
2  df['total_bill'].var()
```

Out[9]:

79.25293861397826

In [10]:

```python
1  #std
2  df['total_bill'].std()
```

Out[10]:

8.902411954856856

In [11]:

```python
1  #25 percentile or Q1
2  df['total_bill'].quantile(0.25)
```

Out[11]:

13.3475

In [12]:

```python
1  #75 percentile or Q3
2  df['total_bill'].quantile(0.75)
```

Out[12]:

24.127499999999998

In [13]:

```python
1  #IQR =Q3-Q1
2  df['total_bill'].quantile(0.75) - df['total_bill'].quantile(0.25)
```

Out[13]:

10.779999999999998

In [14]:

```python
1  # Skewness
2  df['total_bill'].skew()
```

Out[14]:

1.1332130376158205

- If skewness=0, then it is called as perfect normal distribution
- If skewness value lies between -1 to +1 --- normal distribution
- If skewness < -1, then it is left skewed
- If skewness > +1, then it is right skewed

In [15]:

```python
1  # Kurtosis
2  df['total_bill'].kurt()
```

Out[15]:

1.2184840156638854

In [16]:

```python
1  # Covariance
2  df[["total_bill","tip"]].cov()
```

Out[16]:

	total_bill	tip
total_bill	79.252939	8.323502
tip	8.323502	1.914455

In [17]:

```python
1  # Correlation
2  df[["total_bill","tip"]].corr()
```

Out[17]:

	total_bill	tip
total_bill	1.000000	0.675734
tip	0.675734	1.000000

In [18]:

```
1  df.describe()
```

Out[18]:

	total_bill	tip	size
count	244.000000	244.000000	244.000000
mean	19.785943	2.998279	2.569672
std	8.902412	1.383638	0.951100
min	3.070000	1.000000	1.000000
25%	13.347500	2.000000	2.000000
50%	17.795000	2.900000	2.000000
75%	24.127500	3.562500	3.000000
max	50.810000	10.000000	6.000000

In [19]:

```
1  df.describe(include="all")
```

Out[19]:

	total_bill	tip	sex	smoker	day	time	size
count	244.000000	244.000000	244	244	244	244	244.000000
unique	NaN	NaN	2	2	4	2	NaN
top	NaN	NaN	Male	No	Sat	Dinner	NaN
freq	NaN	NaN	157	151	87	176	NaN
mean	19.785943	2.998279	NaN	NaN	NaN	NaN	2.569672
std	8.902412	1.383638	NaN	NaN	NaN	NaN	0.951100
min	3.070000	1.000000	NaN	NaN	NaN	NaN	1.000000
25%	13.347500	2.000000	NaN	NaN	NaN	NaN	2.000000
50%	17.795000	2.900000	NaN	NaN	NaN	NaN	2.000000
75%	24.127500	3.562500	NaN	NaN	NaN	NaN	3.000000
max	50.810000	10.000000	NaN	NaN	NaN	NaN	6.000000